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It is a great honor to be invited to give the first Rudolph Wildenmann lecture. Prof. Wildenmann was a leader in the development of empirical social science in Germany, particularly in the study of political behavior and of elections. He was also a great supporter of innovative methodologies and instrumental in the founding of ZUMA. It is in his spirit and, I hope, a fitting honor to his memory that I have chosen to speak about a topic that lies at the intersection of social science, politics, and concerns for data.

In his acceptance speech at the Democratic National Convention in August, President Clinton cited 27 social and economic facts about the nation. These facts ranged over a great variety of topics from better known indicators such as the unemployment and inflation rates to lesser known facts about the economy (for example, a 4.4 million increase in home ownership, 15 million persons pay less income tax) to social conditions (for example, 1.8 million fewer persons on welfare, 40 million persons with more pension security) to crime (for example, 100,000 more police on the streets, 60,000 fewer persons could get handguns) to health (for example, the life expectancy of AIDS patients doubled, 12 million families took advantage of new family and medical leave opportunities). Of course, these facts are put forth as an argument for the effectiveness of the policies of the Clinton administration.

The use of data for the formulation and evaluation of public policy and the contribution that social scientists can make to the improvement in that use are the subjects of my talk today. The discussion is naturally influenced by own experiences, principally in the area of large-scale sample surveys for governmental agencies, and as a member of the Committee on National Statistics at the National Research Council, a quasi-public body whose mission is the improvement of the U.S. federal statistical system. I will discuss the problems in the context of the uses of information in a democratic society, and I hope that my thoughts and conclusions will be widely applicable to most democratic societies, but inevitably, my reflections draw most heavily on the situation in the United States.

The framing of information about Society

The framing of information affects its perceived relevance to policy considerations. Consider, for example, data about carbon dioxide. Among other things, carbon dioxide is a product that is manufactured, and statistics on its production used to be available as part of economic statistics. We found among economic statistics the fact that there were 1,014,000 short tons of carbon dioxide (liquid, gas and solid) manufactured in the United Sates in 1968. Other facts about carbon dioxide, as, for example, those relating to its chemical properties and the way it is utilised in photosynthesis, would not ordinarily be considered social information.

But, of course, things are not so simple. Natural scientists have raised the possibility that the size of the world's population and their use of natural resources, in particular the burning of fuels like coal and wood and the destruction of large tracts of forested land, will lead to an increase in the concentration of carbon dioxide in the atmosphere which, in turn, produces a "greenhouse effect." The most serious consequence of this effect will be global warming, that is an increase in the average temperature through the world, with attendant changes in agricultural productivity in many parts of the world and in the distributions of peoples. The extent to which there is a trend toward global warming and, if so, whether it is a product of man's activities or of natural cyclical forces is still controversial, but the probability is sufficiently large that governments are beginning to take actions to address the problem. Thus there was a need for new kinds of data that are relevant to the newly framed problem. Now we find that data on carbon dioxide emissions are available. For example, the U.S. produced 5.26 tC/capita or about 17% of the world's emissions in 1985.

This example was chosen to make a point central to my argument. The point concerns the relativity of the classification of data, indeed the very definition of what constitutes data. Whether or not things are viewed as "data" and worthy of being measured, lies in the question being asked, not in the thing itself. Facts about carbon dioxide become data because someone asks questions about this chemical substance and has been able to convince someone else to allocate the resources necessary to collect information, to store it a manner that it can be accessed by those who are trying to answer the questions and, in fact, to make it available to those asking question about carbon dioxide. Facts become "policy-relevant data" when someone starts asking questions about policies to deal with a phenomenon such as the "greenhouse effect" and perceives that the data are needed to answer the policy relevant questions.

If we take the position that "facts" do not become "data" until they are framed by questions, then we naturally ask: how does society decide what data to collect in order to

meet its policy and other information needs? There are, I believe, three main mechanisms by which decisions are made about the ongoing collection of data about society. They are: first, governments, second, markets, and third, social scientists.

Governments

Governments, be they local, regional or national, have responsibilities for the common well-being of society. While the exact responsibilities vary from nation to nation, governments commonly have some responsibilities for such things as defense, maintenance of law and order, education, transportation, communications, natural resources, health, social services and various aspects of the economy. In order to carry out their responsibilities, they need information on an ongoing basis about their respective areas, and part of their budget will be devoted to providing this information for their own needs.

Fulfilling these needs is commonly the task of governmental statistical agencies, although governments may not rely entirely on their official statistical systems for relevant information. Statistical systems vary considerable across nations in the way they are organized. Some, such as Canada and many European countries, have statistical functions centralized in a central statistical office, while others, notably the United States, have a very decentralized system with different governmental agencies having their own statistical bureaus, the entire system being loosely coordinated by a small central office located in the Office of the President. As I understand the German system, it would fall somewhere between a highly centralized system, like Canada's, and a completely decentralized system, like that of the United States.

There is a loose correlation between the scope of governmental responsibilities and the demand for data, but the proper relationship between the responsibility to collect data about different aspects of society and the responsibilities of governmental agencies has been a source of continual disagreement. From the beginning of the United States, there has been a conflict between those who believe that the government should only collect data that is of direct relevance to its mission and others who argue for a larger conception. They would have the government collect data on aspects of society that may be of broad interest to citizens or legislators, but not necessarily of immediate use.

This argument was raised in debates about the content of the first U.S. census in 1790. Minimalists argued that the Census should only enumerate the population because the purpose of the census was only to establish the number of people for apportionment and tax purposes. Others, most notably James Madison, one of the most farseeing of the Founding Fathers, argued for extending the census "so as to embrace some other objects besides the bare enumeration of the inhabitants." He argued for collecting information

about what we would now consider social and demographic characteristics of individuals and economic conditions. Although Madison lost the argument in the first census, later censuses, beginning in the mid-19th Century expanded the number of topics covered in the decennial census.

The argument is still not entirely dead, and there is strong sentiment in the current Congress for eliminating the so-called long form on the next census in the year 2000. The long form is a detailed questionnaire that is given to every sixth household and asks in considerable detail about social, economic and housing characteristics of the American population.

The output of the governmental statistical system constitutes what might be called "official statistics." Official statistics have a special status in that they are relied upon for the formulation and evaluation of governmental policies. In many cases they are also used in models that simulate the effects of policy alternatives. In the United States there are important budget, tax, social welfare and energy models that are widely used by executive branch government departments and by the Congressional Budget Office to model the effects of proposed changes in governmental programs. It is difficult to overestimate the importance of these models and the statistical base that provides the numbers going into the models. As one recent study of microsimulation modeling put it: "Today, whatever the policy issue, "the numbers" play a prominent role. Indeed, in Washington...neither top administration officials nor members of Congress will move very far to develop legislation in the absence of detailed estimates of the cost and other effects of the proposed changes. They treat the estimates not only as informative but often, in the case of costs, as binding." (Citro/Hanushek 1991, p.24).

Because of the uses to which official statistics are put, they should be of the highest quality. Unfortunately, this is not always the case. While government officials may rely heavily on "the numbers", they typically have little understanding or interest in how they are collected or in such technical matters as sampling and measurement error. In times of tight budgets, money for statistical agencies, and particularly for research in method improvement, is frequently reduced without regard to its effect on important data series that provide the basis for governmental decision making or the administration of existing programs. During the initial years of the Reagan administration, statistical budgets were cut severely, partly on the grounds that the scope of government was going to be reduced and that much of the data collected by governmental agencies would not be needed, thereby echoing the conservative views of an earlier age. The Office of Management and Budget estimates that spending on statistics was reduced by 13% in real terms between 1980 and 1988. While there was an effort during the Bush administration, led by Prof.

Michael Boskin of Stanford University, to restore funds, particularly for the improvement of economic statistics, this initiative has only been partially successful and current levels of support are still below those in 1980 in real terms.

Errors in official statistics can have dramatic consequences for policy. One of the most controversial statistics in the U.S. is a basic one that one would not ordinarily think of as subject to error, that is, the estimate of the size of the total population from the decennial census. For many years, it has been known that the census undercounts the population by about 2% overall, but undercounts some groups, such as black men aged 18-24 by as much as 25%. While the size of the undercount is reliably known for the total population and for some of the major subgroups, the undercount for smaller areas such as states or cities, is not precisely known. By using sampling methods, the Census Bureau can estimate the undercount for important areas, such as states or large cities, and use these estimates to adjust the totals to make them more accurate.

Social scientists have played a major role in developing techniques to measure the undercount and in devising methods to adjust census counts to be more accurate. While in previous decades, there was considerable disagreement among the scientists about the appropriate methods for adjustment, there has recently been a convergence of views and a near consensus that there are appropriate methods that can make an adjusted count more accurate. A recent report by a Panel of the National Academy of Sciences (Steffey/ Bradburn 1994) that I chaired recommended a census in the year 2000 that incorporates such adjustment methods.

The argument, however, is much more than a technical one. There are two politically important outcomes of the census that are affected by adjustment. One affects the distribution of political power, that is, the number of seats in Congress which are allocated to different states in the House of Representatives. The other affects the distribution of money, that is, the amount of money distributed to states by the federal government according to formulae based on population. When the distribution of power and money are affected by numbers, it is unlikely that decisions will be made purely on technical grounds, but rather that political forces will be fully engaged in the decision. While the final outcome of the debate is still uncertain, the preliminary proposal of the Census Bureau to use sampling to improve the census count and adjust the counts in accordance with sample data, as has been recommended by numerous technical groups, has been rejected by Congress. If the Republicans continue to control Congress, it is likely that the census in the year 2000 will be done without sampling or adjustments for the undercount.

Another statistic that has recently received a lot of attention because of alleged mismeasurement is the Consumer Price Index (CPI). The CPI is the principal measure of inflation. It is used in many unionized wage agreements to adjust wages in periods between contract negotiations. It is used to adjust many government payment levels like old-age pension benefits and to adjust income tax brackets. Because so many payments are tied to the actual level of the CPI and because it is used as a principal economic indicator by bankers and the financial markets, it can affect many aspects of the economy such as interest rates, stock market prices and the federal deficit.

For a number of years experts in economic statistics have known that the CPI overstated inflation by some unknown, but non-trivial amount. The Bureau of Labor Statistics, the government agency that is responsible for the data base that is used to calculate the CPI, had been planning for years to start a program of research to revise the CPI and the surveys which provide the data that are used to calculate it. The Bureau's plans for an orderly program of research were interrupted by a casual comment from the Chairman of the Federal Reserve Board during testimony before Congress. He noted that the CPI overstated inflation with the result that the federal deficit was larger than it would be if the CPI properly measured inflation. He estimated that the CPI overstated inflation by about 1 percentage point (or by 33% on the current reported rate of about 3%) and that this overestimate added about $6 billion per year to the federal deficit through a combination of increased payments in benefits and reduced tax revenues.

The Chairman's statement immediately became big news and politicians began to bring pressure on the BLS to immediately adjust their numbers downward by 1 percentage point. Much to the Bureau's credit, the Commissioner of Labor Statistics resisted this pressure and refused to do any arbitrary adjustments in spite of dire warnings from the Mr. Gingrich, the Speaker of the House of Representatives. Congress did appoint a panel of distinguished economists to review the information available from past research and, if possible, make a consensus recommendation about the degree of overstatement in the present CPI that might be used as an adjustment factor in formulae using the CPI. They are supposed to report by the end of the year. In the meantime, the BLS is proceeding with its research program and plans to introduce a revised CPI in a few years. Ironically, the BLS had submitted a budget request a number of years ago to start a major revision of the CPI, but it was turned down. If the request had been granted when it was requested, the revisions would have been completed by the time the politicians took up the cry for immediate change.

Market

A second source of social data is the private marketplace. While much of data collected in the private sector is proprietary, there are notable exceptions. The most widespread is information about financial markets such as the well-known stock and bond market indices and the prices of individual securities traded in the market. The provision of this type of information is made possible by the sale of individual copies of newspapers and magazines, and by advertising.

Virtually no opinion data are provided by official statistics. "Softer" data about social and political attitudes and public opinion about policy issues of the day are almost entirely provided by the private market, particularly the mass media. Since the early days of polling, newspapers, magazines, and later, TV networks, were the principal founders of the "public" opinion polls, as contrasted with private polling that is done for candidates, political parties or interest groups. In the U.S. the large national newspapers and news magazines together with the electronic media, produce a large proportion of the public polls that are related to policy issues. During election campaigns, the amount of survey data that fills the media can be staggering.

With the development of computer networks, most notably the Internet, the provision of information through commercial data bases containing both statistical and other information, has become economically viable. These data bases may contain government data, repackaged to make them more accessible or "user friendly", data previously published but difficult to access and even proprietary data. The ability to provide access to large amounts of data at low cost promises to make this an explosive market. As firms are able to capture the value of the data by selling access to it, we can expect not only an increase in data bases of data collected for other purposes, but also more data series that have been collected specifically to supply a broad market for social information.

Social Sciences

Social scientists play a distinctive but somewhat different role in the provision of social data. Trained social scientists, of course, are a part of the labor force that is employed by governmental statistical agencies and private survey research firms, although not all people working in these organizations are trained social scientists. But the more important roles for social scientists are twofold: First, they play a vital role in defining the questions that are important to ask, and thus, to collect data about; and, second, as I don't need to tell this audience, they play the major role in developing measurement and analytic methods and in setting the standards for the quality of data collection.

There are several ways that social scientists contribute to defining the questions that are asked and the data to be collected. First, social science theories, particularly economic theories, provide the framework for understanding social and economic systems. Theories specify the variables that are of interest in policy applications, and thus, indicate the types of data that are necessary to collect. This process may be more or less formal and self-conscious. When policy analysts use simulation models, the types of data needed are spelled out in some detail and the lack of some type of data may then become clear. Models play a useful role in specifying data needs and rationalizing the data collection agendas of government agencies. For example. when monetary theories of inflation were popular, interest in different ways to measure the money supply grew and there was a lively debate about the meaning of different measures such a M1, M2, M3, etc. which measured different types of time deposits and money instruments that were cash equivalents.

Social scientists also play a role in clarifying important measures of their concepts and suggesting better ways to conceptualize and measure them. This is one of the tasks that the Committee on National Statistics at the National Academy of Sciences undertakes. For example, a panel of economists and other social scientists examined in detail the way in which international trade data are collected and analyzed to produce statistics on the U.S. balance of trade. They concluded that the Commerce Department was using obsolete methods of assigning transactions to domestic or foreign firms and that they failed to distinguish properly foreign based branches of US firms and US based branches of foreign firms. By treating transactions among branches of these types of firms both within and between countries incorrectly, the balance of trade figures were quite misleading. With the new way of computing the trade balance, the US trade deficit was much lower and in some years it was actually in surplus, when the government was reporting it in deficit. Much of the US trade policy is driven by the data on the balance of trade with different countries, notably Japan and the EU, If the definition and measurement of the trade balance is faulty, it will lead to serious policy errors.

One could list many other data series that are the result of social scientific theories about significant social and economic processes such as the national economic accounts, the unemployment rate, population growth rates, teenage pregnancy rates, etc.

The development of the idea of social indicators some years ago represents a different approach to the use of social data related to social policy. Rather than specify a theoretical view of social functioning, these social scientists investigate the goals of society, look at the currently available data, and point to those areas where adequate data do not exist. This approach is well exemplified by Albert Biderman's paper in one of the

first volumes on Social Indicators, edited by Raymond Bauer (Bauer, 1969). Biderman analyzed the social goals discussed in the 1960 Report of the President's Commission on National Goals and the 30 years earlier Report of President Hoover's Committee on Recent Social Trends. He found that there was considerable overlap in the goals discussed in the two reports, but that there was a substantial lack of relevant data for the goals in both reports. The identification of these lacks led to the development of new data, most notably the development of good data on income and program participation that tracked more clearly the receipt of transfer payments through governmental programs. This is the approach that has been followed in Germany by the social indicators project centered here in Mannheim.

While the enthusiasm for social indicators as an important tool for evaluating government success that was characteristic of its early days has cooled, serious work has continued, more steadily in Germany than in America. Social scientists at the University of Mannheim and ZUMA have made important contributions to that work and continue to do so. There is some indication of a revival of interest in social indicators in the United States and in the OECD, which has a large project on standardizing education indicators.

It is interesting to speculate on the reasons for the waxing and waning of interest in social indicators. It is difficult today to convey the extraordinary excitement that the idea of social indicators aroused when they were first proposed. In the U.S. the enthusiasm in the 1960's was so great that it could almost be characterized as a social movement. The idea of social indicators was regarded by its supporters as an extension of rationality to societal functioning. That is, societies were viewed as having general goals that they are trying to achieve and as having different means available to achieve these goals. The application of thought and planning can illuminate the relative value of the different means, so that society's members can choose the best means, however, defined, to achieve the goals.

The interest in social indicators was an extension of the process of rationalization of life that has been going on with varying degrees of speed in the Western world since at least the eighteenth century. What was new was not the idea of using data to monitor progress toward goal accomplishment, but the radical altering of the level at which this exercise was being attempted. Attention turned from the measurement of the performance of middle-level aggregates, such as firms, hospitals, sectors of the economy, etc., to the measurement of the performance of the society itself. Social scientists were prominent in the social indicators movement and were able to secure government positions that allowed them to begin to put their ideas into practice.

The change in the level at which questions of means-ends relationships were being asked turned out to be more radical that it appeared at first. At smaller levels of organization, such as those of a business firm or school system, the goals are, if not single, at least few in number, and the criteria by which the possible means for achieving the goals are to be evaluated are also fairly clear. Furthermore, the decision processes for the allocation of resources to those organizations lie outside the organizations, for example, decisions are made by the market, governmental appropriations or philanthropic endeavors, rather than by the activity of the organization itself.

Thus, it is possible to be "rational" about the means without bringing into question the relative value of the goals of the enterprise.

In a democratic society, however, one must deal with different goals whose relative ordering is not clearly agreed upon or necessarily even constant over time. In addition, the arena in which the relative importance of the goals is decided is the same one in which the means for reaching the goals are decided upon, namely, the political one. Thus, the extension of the concept of social indicators to the level of societal decisions, that is the use of social data to answer questions systematically about the achievement of societal goals, will inevitably lead to an increased politicization of the collection and use of social data and, by extension if one is not careful, to the politicization of the social sciences. Since at the societal level, the questions of means and ends are resolved by the political process, the participation of social scientists attempting to marshall data to answer questions "scientifically" about relative means for accomplishing goals cannot be the same as their participation in lower levels of organization, such as the planning of training programs, or in evaluating the effectiveness of a medical care program.

The confrontation between the idea of a "social report" that systematically laid out data about progress toward achieving stated societal goals, as for example, the elimination of poverty in President Johnson's War on Poverty, and the realities of electoral politics, made it clear that neither Congress nor the President wanted such a report which could show failures as well as successes. After three years, the idea of a government report card on the nation's achievements (or as it turned out lack of them) was laid to rest. Support for the idea that deep societal conflicts over competing goals could be resolved by the rational application of social engineering and monitoring by the collection of systematic indicator data declined drastically.

The retreat from viewing social indicators as a total solution to the problem of evaluating the political process did not mean that interest in indicators died. It has continued in a more muted form, and social scientists have continued to play an important role in developing performance indicators at lower levels of aggregation such as the economy,

health and education. The important role of social scientists in the development of measures that can then be used to monitor the effects of social policies is well illustrated by the development of the National Assessment of Educational Progress (NAEP). In the U.S., as in Germany, education is the responsibility of the states, rather than the federal government. The federal government, however, has a great interest in the quality of education in the country, and has responsibilities for aspects of social welfare that are related to education, such as insuring equal opportunity to obtain an education. As a result of the Supreme Court racial desegregation decision in the early 1950's, the role of the federal government in education was greatly enlarged.

As early as 1867 a federal Office of Education has been established for statistical purposes. One of its tasks was to report on the progress of education in the United States. An examination of educational statistics over most of the period since then indicates that "progress" was defined largely in terms of the educational level of the population rather than in terms of specific knowledge. The launching of sputnik by the Soviet Union focused attention on the quality of U.S. scientific and mathematical education. People began to raise questions beyond how much schooling our youth received and to ask questions about how good the schooling was in terms of what the graduates of the schools knew about different subject matters.

The idea of measuring knowledge as an outcome of schools was not an idea that was congenial to many school administrators or teachers. The strong traditions of local control of schools and local setting of standards were in opposition to attempts by the federal government to give anything that looked like a national test or to use measures that would allow comparison across schools or school districts in terms of the quality of outcomes.

The development of NAEP was done by a group of social scientists financed by a private foundation. It took about five years to bring the idea to the point that it could be put in practice as a national governmental program.

Its development illustrates several important points about the interplay between policy concerns and data sources. First, some policy entrepreneurial group has to take the lead in formulating the policy issues that give rise to the demand for the data. In this case leadership came from both the educational community and from social scientists. They formed an Exploratory Committee that did the political work necessary to overcome opposition from those who had something to lose, or, at least thought that they had something to lose, by the implementation of a nationwide assessment. This Exploratory Committee was composed of social scientists, educators, politicians, and leading citizens who drew into their activities people from diverse and important segments of the

educational system. Membership was crafted to maximize the chances to influence policies at a variety of political levels--federal, state, and local--that were crucial for getting cooperation from the school systems.

Second, the technical work of developing measuring instruments and testing the data collection plan went on simultaneously with the political work. The technical problems were serious because the assessment design had to be constructed so that it would measure change in the nation as a whole, but could not be used to measure the accomplishments of an individual school or of an individual student. To sell the idea of a national assessment, it was vital that the testing plan would not allow an assessment at the state, local or individual school level.

The simultaneous development of the measuring instruments and the political support for the idea of an assessment was important for the success of the idea. Once support for the idea of an assessment had been achieved, it had to be executed rapidly before support eroded. If the Exploratory Committee had waited to begin development of the measuring instruments until support for the idea of the assessment was high and the funding secure, the National Assessment would never have gotten off the ground.

The supporters of the National Assessment believed, correctly as it turned out, that the existence of national data on students' performance would stimulate demand for more disaggregated data, which in the beginning was viewed as unacceptable. The demand manifested itself in three major developments. First is the implementation of state level assessments. The governors of the various states want to have comparable assessments in their states so that they can compare the achievement of their states with that of others.

The second is a renewed interest in international comparisons, particularly in science and mathematics, using a metric that can be linked in some fashion to NAEP measures. The Third International Math and Science study (TIMS) has received major support from the United States in order that we can better understand the standards we apply to our educational system as compared with those of other industrialized nations.

The third development is the renewed interest in finding alternatives to standardized multiple-choice tests that have become the hallmark of mass testing programs. There have always been criticisms of multiple-choice test on the grounds that they do not measure creative problem solving or higher order thinking skills. Some progress is being made in the development of performance tests, although formidable problems of cost and reliability have still not been overcome. This is an area where the work of social scientists is essential for the technical development of the measures.

Conclusions

In this talk I have briefly discussed some of the issues that confront those who are interested in the production of data for policy use. I have focused mainly on how decisions are made about what data to collect and how such data are framed, with particular emphasis on the role of social scientists in that process.

Social scientists bear a special responsibility for insuring the quality of the data collected and analyzed for policy purposes. But many social research projects fail not because the data collection was poor or the analysis was bad, although there are certainly many example of such projects. They fail because those asking the questions did not make the questions clear to those collecting and analyzing the data, and those collecting and analyzing the data did not understand the political problems facing those who were to be the ultimate users of the data.

To a considerable extent, we social scientists are responsible for this situation. As the social sciences have become more "scientific" there has been greater emphasis in graduate training on the technical scientific aspects of the social science disciplines and less emphasis, even in some universities to the vanishing point, on the relation of social inquiry to social policy. Even in political science, which traditionally has been a field deeply concerned with public policy, there has been a movement toward formal, "rational " approaches which stress scientific and theoretical rigor at the expense of concern for problems of the utilization of social research.

The tension between "scientific" and "policy" research is certainly not new. It was present in President Hoover's committee in the tension between the University of Chicago sociologist, W.F.Ogburn, who stood for the scientific spirit in social sciences, and his colleague, the political scientist Charles Merriam, who had a great appreciation for the political aspects of social research. Today, the scientific approach, which was in its early stages in the 1920's, has flowered almost to the exclusion of concern for policy implications of social research. How we achieve a proper balance between these two concerns in contemporary social science training is one of our most important unresolved questions.

The challenge was aptly noted by the authors of the report by the Committee on Recent Social Trends:

"More widely in the future than in the immediate past, we may expect the growth of thinking about the meaning of the great masses of social data which we have become so expert and generous in assembling. Is it possible that there is a radical inconsistency between the industrious and precise collection of material and the effort to interpret and

utilize what has been found out? Or, on the contrary, is there compelling urgency that they be brought together both for the sake of science and of society?... It might be said, indeed, that while the most recent phase of American development in the social field has been the recognition of the necessity of fact finding agencies and equipment, and their actual establishment, the next phase of advancement may find more emphasis upon the interpretation and synthesis than the last."

More than 60 years have passed since these words were written. Professor Wildenmann was acutely aware of this tension and exemplified the social scientist who met the challenge of bridging the two worlds of science and application, data and policy relevant analysis. We must ask ourselves: Have enough of us risen to that challenge to be able to declare confidently that we have progressed into "that next phase of advancement?" I am not confident that we have.

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